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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,415	09/30/2003	Norihiro Ookawa	16869G-087600US	8073

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EXAMINER	
WATKO, JULIE ANNE	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/676,415	OOKAWA ET AL.	
	Examiner	Art Unit	
	Julie Anne Watko	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/05/2006 & 07/10/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 and 5* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuzawa et al (US Pat. No. 6338899 B1).

As recited in claim 1, Fukuzawa et al show a magnetoresistive head (see Fig. 28) comprising: a lower magnetic shield 11 formed above a substrate 10; a magnetic domain control underlayer 12 formed above the lower magnetic shield 11; a multi-layered film (including 143, 144, 145 and 146) formed above the magnetic domain control underlayer 12, the multi-layered film comprising an underlayer (141 and/or 142), a free layer 146, a non-magnetic layer 145, a pinned layer 144, and an anti-ferromagnetic layer 143 for pinning a magnetizing direction of the pinned layer 144; a magnetic domain control film 15 formed above and being in contact with the magnetic domain control underlayer 12, said magnetic domain control film 15 being in contact with both of lateral ends in the direction of the track width of the free layer 146 (see Fig. 28), for conducting magnetic domain control of the free layer; a pair of electrode films 16 for supplying an electric current to the multi-layered film; and an upper magnetic shield 18 formed above the multi-layered film (including 143-146) and the electrode film 16.

As recited in claim 2, Fukuzawa et al show a magnetoresistive head (see Fig. 28) comprising: a lower magnetic shield 11 formed above a substrate 10; a magnetic domain control underlayer 12 formed above the lower magnetic shield; a multi-layered film (including 143-146) formed above the magnetic domain control underlayer 12, the multi-layered film comprising an

underlayer (141 and/or 142), a free layer 146, a non-magnetic layer 145, a pinned layer 144, and an anti-ferromagnetic layer 143 for pinning a magnetizing direction of the pinned layer 144; a magnetic domain control film 15 formed above and being in contact with the magnetic domain control underlayer 12, said magnetic domain control film (including 143-146) being in contact with both of lateral ends in the direction of the track width of the free layer 146 for conducting magnetic domain control of the free layer 146; a dielectric film 17 formed above the magnetic domain control film 15; and an upper magnetic shield 18 formed above the multi-layered film (including 143-146) and the dielectric film 17.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa et al (US Pat. No. 6338899 B1).

Fukuzawa et al show a head as described above.

Fukuzawa et al are silent regarding the dimensional limitations and ranges recited in claims 4-5.

It is well established that there is no invention in altering the dimensions of a known apparatus, absent unexpected results due to the claimed dimensions. the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the magnetic head of Fukuzawa et al satisfy the relationships set forth in claim 4. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the magnetic head of Fukuzawa et al satisfy the relationships set forth in claim 4 since it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization /experimentation and thereby obtain various optimized relationships including those set forth in claim 4.

Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the relationships set forth in claim 4 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Applicant has failed to present evidence of unexpected results due to the claimed dimensional ranges.

Allowable Subject Matter

2. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

3. Applicant's arguments filed June 5, 2006, and July 10, 2006, have been fully considered but they are not persuasive.

On June 5, 2006, Applicant argued that 141 was not an underlayer of longitudinal bias film 15 insofar as 141 was an underlayer of antiferromagnetic layer 143. The Examiner considered this argument thoroughly, but found it non-persuasive because the independent claims were written in open language, such that additional non-recited parts would not defeat anticipation. Furthermore, the claims did not exclude devices in which additional, non-recited layers appeared between the magnetic domain control underlayer and the magnetic domain control layer. Moreover, no interaction is claimed between the magnetic domain control underlayer and the magnetic domain control layer.

During a telephone interview on July 10, 2006, the Examiner and Applicant's representative discussed the non-persuasiveness of Applicant's argument.

The Examiner suggested during the interview that Applicant claim some interaction between the magnetic domain control underlayer and the magnetic domain control layer, provided that such interaction were supported by the specification. Instead, Applicant amended the claims to require contact between the magnetic domain control layer and the magnetic domain control underlayer. Although the Examiner is persuaded not to rely upon Fig. 17 of Fukuzawa et al, the amended independent claims are anticipated by Fig. 28 of Fukuzawa et al.

Terms in each claim are given their broadest reasonable interpretation. Applicant has chosen to describe the layer in question using the broad limitation "underlayer" in lieu of terms (e.g., seed layer) known in the art to suggest that a layer was selected to achieve some effect

(e.g., epitaxial control) upon another layer. Furthermore, Applicant has chosen not to recite any interaction between the magnetic domain control underlayer and the magnetic domain control layer, the Examiner gives the limitation "underlayer" its broadest reasonable interpretation. Because 12 is under magnetic domain control layer 15, it is an underlayer.

Applicant has claimed, *inter alia*, "a magnetic domain control film formed above and being in contact with the magnetic domain control underlayer" in independent claims 1 and 2. Because the magnetic domain control film 15 is above and in contact with 12, gap 12 meets the claimed limitations of the underlayer.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday through Thursday, noon to 10PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko, J.D.
Primary Examiner
Art Unit 2627

July 19, 2006
JAW